REMARKS

Amendments to the specification have been made and are submitted herewith in the attached Substitute Specification. A clean copy of the specification and a marked-up version showing the changes made are attached herewith. The claims and abstract have been amended in the attached Preliminary Amendment. All amendments have been made to place the application in proper U.S. format and to conform with proper grammatical and idiomatic English. None of the amendments herein are made for reasons related to patentability. <u>No new matter has been added</u>.

In the unlikely event that the transmittal letter is separated from this document and the Patent Office determines that an extension and/or other relief is required, applicant petitions for any required relief including extensions of time and authorizes the Commissioner to charge the cost of such petitions and/or other fees due in connection with the filing of this document to **Deposit Account No. 03-1952** referencing docket no. 449122078800. However, the Commissioner is not authorized to charge the cost of the issue fee to the Deposit Account.

Dated: January 3, 2005

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va-89368

New U.S. Appln.
Attorney Docket No.: 449122078800

~~Description~~

METHOD FOR THE ELECTRONIC PAYMENT OF GOODS OR SERVICES USING A MOBILE RADIO NETWORK AND ARRANGEMENT FOR
5   IMPLEMENTING ~~SAID~~ THE METHOD

CLAIM FOR PRIORITY

This application is a national stage of PCT/EP2003/006136, published in the German language on January 15, 2004,
10   which claims the benefits of priority to European Application No. 02014720.3, filed on July 3, 2002 and German Application No. DE 102 29 901.3, filed on July 3, 2002.

15   TECHNICAL FIELD OF THE INVENTION

The invention relates to a method for the electronic payment of goods or services ~~according to the preamble of Claim 1~~ and a suitable arrangement for implementing ~~said~~ the method.
20

BACKGROUND OF THE INVENTION

As well as being used as a communication tool and information source by hundreds of millions of people at present, the internet is also becoming an increasingly
25   important purchasing source. A significant proportion of trade in software, books and travel currently operates via the internet, but a wide range of other goods and services are also ordered and paid for via the internet. Payment for corresponding services using the internet in the

originally established and still most widely used fashion
requires that the relevant data records are input
separately at least for every business partner if not for
each individual transaction. This payment method thereby
5   allows the business partner to access sensitive personal
data and even allows them to store it in the long term.

In the meantime, the internet has also become a
significant tool for handling other payment processes,
10   both business and private. Almost all banks in
industrialized countries offer electronic banking for the
electronic handling of account management and payment
processes.

15   The requirements for electronic payment methods differ
tremendously for the different situations. This applies
both to internet payment methods and to mobile payment
methods based for example on SMS, WAP and USSD.

20   Suitable methods are required, in particular, for so-
called micro-payment. These are invoices for small amounts
(typically less than EUR 5.00), which cannot generally be
processed in a cost-effective manner using existing
electronic payment methods, e.g. direct debit. Also micro-
25   payment processes often comprise a plurality of individual
small transactions rather than a single transaction (e.g.
filling a shopping basket when shopping online). In the
future, an increasing number of services on the internet
will be charged for, e.g. web content, whereby the costs

are a function for example of the volume of data transferred or the number of downloaded pages. Costs/charges are therefore continuously incurred as with a telephone call. When charging for content the costs are

5   generally not a function of time but a function of user behavior. Time-based charges are however also possible in principle.

When making a telephone call, users do not generally have

10 to authorize payment. It is assumed that as soon as a user dials a number on their telephone, they agree automatically to the telephone provider charging it to their account. This is generally not a problem, as a relationship of trust and also a correspondingly

15 structured contractual relationship exists between the user and the telephone service provider.

This is not, however, always the case with e-commerce. Users can come across an arbitrary service of interest to

20 them, the use of which has to be paid for, by chance on the internet. Since, in this case, there is no relationship of trust, the user first has to agree to a payment. In other words said user either confirms it (e.g. with OK) or authorizes it (with a PIN). Users do not,

25 however, want to do this for each one of a series of charges. For one thing this is a lengthy process for the user and for another it is unacceptable for some services, such as streaming audio/video, as the audio/video might possibly have to be interrupted for each charge.

The technical problem essentially involves developing a
method which satisfies the above points:

5   - Universality: same basic principle for different
          access methods, e.g. web, SMS and WAP.
        - Supports continuous charging, whereby the user can
          determine in a flexible, service-specific and direct
          fashion whether and when the next
10   confirmation/authorization should take place.
        - Stipulation of the next confirmation/authorization
          must remain confidential as far as the retailer is
          concerned.
        - It must be possible for the user to make payments
15   anonymously in respect of the retailer.
        - The operation must be organized as simply as
          possible.
        - The operation must be organized so that it is secure
          in respect of various attacks.
20

European patent application 00 121 482.4 (published as EP
1 193 658 A1) ~~and a further earlier patent application
(internal reference 200201374) by the applicant~~ deals
with this basic problem.
25

~~The first mentioned~~The publication describes how a money
sender can transmit an electronic amount of money
anonymously to a money recipient using a recipient ID
(RID) - which is ~~however~~ hereafter referred to as a

session ID (SID) (for consistency of description). This
allows the customer to remain anonymous in respect of the
PSP (Payment Service Provider) and the retailer. The
method is shown in a simplified fashion in Fig. 1 and the
5   brief description which follows:

The retailer transmits the amount of money to be paid (1)
to the PSP and receives a unique session ID (SID) (2)
back. The retailer transmits the SID to the customer, e.g.
10 verbally at a POS (point of sale) (3). The customer sets
up a connection to the PSP and transmits the SID (3), as a
result of which ~~said~~ the customer can also be identified
at the same time from their MSISDN. The PSP sends back the
associated amount to be paid (5) and the customer confirms
15 payment with a PIN (6). The retailer is notified of the
SID as confirmation of payment.

~~Said prior application describes the~~ In a so-called pre-
confirm method, i.e. a customer can confirm in advance a
20 larger (or even smaller) amount than the retailer
requires. This means that the retailer can make subsequent
charges without the customer having to provide repeated
and inconvenient confirmation. As customers themselves
specify the maximum amount, they can determine the payment
25 in a very flexible manner. They only have to confirm the
payment again when the previously confirmed amount has
been used up.

A brief description of this method is given below and in
Fig. 2 with reference to its essential steps:

The retailer wishes to charge an amount of $1 to the
5   customer via the PSP (1). The PSP verifies that the pre-
confirm account $ is adequate. If not the customer must
confirm the amount with a PIN (2, 3). The customer can
also confirm a larger amount ($2) and the pre-confirm
account is adjusted accordingly. The amount $1 is
10   confirmed to the retailer (4). When payment is next
requested (5), the pre-confirm account is adequate so the
amount can be confirmed immediately (6). These steps are
repeated until the pre-confirm account is no longer
adequate and the user must confirm again.
15

The above-mentioned first method is very significantly
oriented towards real POS, e.g. shops or vending machines,
and prepaid accounts. The basic principle can thereby be
extended with SID in a relatively simple manner to support
20   other scenarios (e.g. web, WAP, SMS). Also pre-confirm can
be set up on the basis of SID. The method only takes into
account the situation where servers are operated by mobile
radio operators. The second method mentioned above needs
to be set out more specifically with regard to how it is
25   actually set up.

SUMMARY OF THE INVENTION

The ~~object of the~~ invention ~~is therefore to~~ provides an
electronic payment method and corresponding arrangment,

which has been worked out in practice and is particularly
tailored to the requirements of micro-payment. ~~The object~~
~~also includes a corresponding arrangement.~~

5   ~~This object is achieved as far as the method is concerned~~
~~by a method with the features of Claim 1 and as far as the~~
~~device is concerned by an arrangement with the features of~~
~~Claim 16.~~

10 The invention resolves the above-mentioned technical
problems based on the following premises:

- It is ensured on the basis of a session ID (SID) that
  the customer can (but does not have to) remain
15   anonymous in respect of the retailer (service
  provider).
- The SID also enables the customer to allow the
  retailer to make continuous charges without the
  customer having to confirm/authorize the payment.
20 - The limit of the maximum total charge can be set by
  the customer in a flexible and service-specific
  manner.
- The method supports a very wide range of access
  methods for the customer, e.g. WEB, WAP, SMS and
25   voice/DTMF. It can be used both on the internet and
  at POS (points of sale). The interface between the
  retailer and PSP is typically provided via standard
  data lines.

The method comprises the following steps in an expedient implementation; see also Figure 3 and the diagrams of exemplary embodiments in Figures 4 to 7 and the corresponding sections of the description below.

5

1) Customer wants to use a retailer's service, e.g. to request WAP content, pay for goods in a web shop or at a POS.

1a) If the retailer was able to identify the customer and
10 determine an SID assigned to the customer, the retailer can provide this in step 2).

2) The retailer sends a charge request with an SID (if available), the amount to be paid (AmountX), the retailer ID and a context (what was bought) to the PSP.

15 3) The following distinctions are made here:
- If no SID was provided at 2), the PSP sends a unique SID back to the retailer. Steps 3a to 3f then follow.
- If an SID was provided at 2), with which no charge could be made (e.g. because the customer has to authorize
20 payment first), the SID or alternatively a new SID is returned. Steps 3a to 3f then follow.
- If an SID was provided at 2), with which a charge could be made, the charge is confirmed to the retailer. Step 4 then follows.

25 3a) If the verification was negative at 3) (i.e. no charge possible), the PSP notifies the retailer of an SID.

3b) The retailer notifies the customer of the SID. In the case of WAP and WEP this can be achieved as a parameter in a redirect from the customer to the PSP, in the case of

SMS the retailer can send the customer an SMS containing the SID. At a POS the SID can also be communicated verbally.

3c) The customer forwards the SID to the PSP. In the case of WEB and WAP this can be done automatically, i.e. no input is required from the customer (redirect). In the case of SMS the customer can forward the SMS from the retailer containing the SID to the PSP. In the case of voice/DTMF the customer generally has to call the PSP and communicate the SID via DTMF.

3d) The PSP notifies the customer of the required amount (Amount X), the retailer name and context (e.g. via WEB, WAP, SMS or voice).

3e) The customer identifies themselves, e.g. automatically via their MSISDN or by inputting their ID. The customer can also change (AmountY) the required amount (AmountX), e.g. increase it for advance confirmation of subsequent payments. The customer can also confirm/authorize the payment (e.g. PIN).

3f) Verification of customer profile and liquidity.

4) The PSP carries out the necessary verifications of the payment.

5) As an option the PSP can confirm the payment (AmountX) to the customer (e.g. by SMS).

6) The PSP confirms the posting of the amount to the retailer.

7) The retailer sends the goods to the customer.

In the case of connection-related operations with WAP and
WEB, for example, the communication relationship switches
from customer<->retailer first to customer<->PSP typically
on the basis of connection redirect. So that the customer
5   can use the required service from the retailer again after
payment, a redirect takes place from the PSP back to the
retailer. These redirects are only implementation-specific
and are therefore not shown in the sequence.

10 After advance confirmation of an adequate amount a charge
only comprises steps 2), 3), 4) and 6) and can therefore
be processed very efficiently. The advance confirmation of
an amount does not have to be directly related to a
purchase. The customer can for example confirm an adequate
15 amount for an SID in advance, for example to pay at
parking meters. If the retailer records the assignment
between customer and SID, steps 3a to 3f can be omitted
for all future payments. Identification of the customer
can for example be based on the MSISDN of an SMS or an ID
20 at login. It is important here that the user ID for the
retailer is independent of the user ID for the PSP. There
are therefore no dependencies and the retailer does not
have to know the user ID of the customer for the PSP.

25 A customer always has the option of having a list of their
valid SIDs displayed for the PSP. As well as the SID,
associated data such as the amount still available and the
associated retailer can be displayed. Selected SIDs (at
the PSP) can also be deleted, e.g. via WEB, WAP and SMS.

After deletion of the SID the retailer cannot make any
further charges without involving the customer. The entire
operation then has to be carried out before a charge can
be made again (e.g. request SID and confirm payment).

5

The PSP does not have to manage the actual accounts and
administer the money of the customer and retailer. The PSP
can for example have interfaces with a clearing house,
which deals with the clearing and settlement of the
10   accounts.

The method has the following advantages:

- The basic principle of the method is identical for the
15   different access methods (e.g. web, WAP, SMS, etc.). This
simplifies the setting up of the payment system, the use
of the method for retailers and customers without
restricting flexibility.
- The method supports both individual charges and
20   continuous charging. The latter is primarily of importance
for content charging, where charging is for example
volume-based (pay per click) or even time-based.
- Cost control: The customer can confirm amounts in
advance in a service-specific manner and thereby avoid
25   inconvenient posting confirmation/authorization.
- With amounts confirmed in advance charges can be
implemented very quickly. In a simple instance the
customer only has to send the retailer an SMS to obtain a
drink from a vending machine, for example.

12

- High level of security: The customer does not have to
give the retailer any confidential or payment-related
data, e.g. PIN or account number.
- The customer can remain anonymous in respect of the
5 retailer.

~~Further aspects of the invention will emerge from the
subclaims.~~ It should be noted specifically that
advantageous embodiments of the method specified in the
10 dependent method claims should also all be understood as
embodiments of the suitable arrangement for implementing
said method, whether in hardware or software form.

BRIEF DESCRIPTION OF THE DRAWINGS

15 The invention is described below with reference to
exemplary embodiments, which are examined in more detail
with reference to diagrams, in which:

Fig. 1   shows ~~a schematic diagram of~~ the sequence of a
20 known electronic payment method.~~,~~

Fig. 2   shows ~~a schematic diagram of~~ an electronic
payment method which is the subject of a prior patent
application~~,~~.

25

Fig. 3   shows a block diagram with method steps marked
for associated clarification of essential ~~concepts
of~~aspects the invention~~,~~.

Fig. 4   shows a block diagram of a first embodiment of the invention~.

Fig. 5   shows a block diagram of a ~~further~~ second

5   embodiment of the invention~.

Fig. 6   shows a block diagram of a third embodiment of the invention~.

10   Fig. 7   shows a block diagram of a ~~further~~ fourth embodiment of the invention.

DETAILED DESCRIPTION OF THE INVENTION

With regard to Figs. 1 and 2 reference should be made to

15   the explanation of the prior art in the introductory part of the specification; with regard to Fig. 3 to the explanation of an expedient implementation above.

Fig. 4 shows a first posting process for the first

20   retrieval of a chargeable WAP content by the purchaser from a provider. In ~~step~~ S1, a request is sent from the WAP-capable terminal (e.g. mobile telephone) 11 of the purchaser via a GSM telecommunication network 12 to the server 13 of a provider. In ~~step~~ S2, the vendor transmits

25   the transaction data, which comprises the ID of the vendor, the designation and invoice total of EUR 1 for the WAP content, via a data network 14 to the server 15 of a Payment Service Provider (PSP).

As after verification of the transaction data in step S3
no session ID (SID) assigned to the purchaser was
determined, a unique SID is now generated on the server 15
of the PSP by step S3.1 and transmitted in step S3.2 to
5   the server 13 of the provider, where it is stored. This is
sent in step S3.3 as a parameter in the URL of a WAP
redirect to the mobile telephone 11 of the purchaser,
whereby the SID is automatically transmitted to the server
15 of the PSP in step S3.4 in the context of the WAP
10   redirect. Then in S3.5 the ID of the vendor, the
designation and invoice total of EUR 1 for the WAP content
are sent from the server 15 of the PSP to the mobile
telephone 11 of the purchaser. In step S3.6 the purchaser
is identified from the known MSISDN of the mobile
15   telephone by means of a WAP-GW request and authorization
of a credit of EUR 3 is also effected with a PIN.

In step S4 the credit amount is assigned to the
transaction account associated with the SID on the server
20   15 of the PSP and the invoice total is posted to the
transaction account and, after verification of the
purchaser profile in S5, in S6 a posting conformation,
including the invoice total of EUR 1 and the retailer ID,
is sent to the mobile telephone 11 of the purchaser. After
25   transmission of the posting confirmation from the server
15 of the PSP to the server 13 of the provider in the form
of SID and invoice total for the WAP content in S7, in
step S8 release is given for transmission of the WAP
content to the mobile telephone 11 of the purchaser.

Fig. 5 describes a posting process for a chargeable WAP
content, as might follow the example in Fig. 4. In step S1
a further request is sent from the mobile telephone 21 of
5   the purchaser to the server 23 of the provider, who in
step S2 transmits the transaction data, comprising the
vendor ID, the designation and invoice total of EUR 1 for
the WAP content and SID to the server 25 of the PSP. After
positive verification of the transaction data or SID, the
10   credit amount and the customer profile in steps S3 to S5,
in step S6 the invoice total is posted to the transaction
account on the server 25 of the PSP. When the posting
confirmation has been sent S7 to the server 23 of the
provider, in step S8 release is given for transmission of
15   the WAP content to the mobile telephone 21 of the
purchaser.

Fig. 6 shows the use of a chargeable service based on SMS,
whereby in step S1 a request is sent from the mobile
20   telephone 31 of the purchaser via a mobile radio network
32 to the server 33 of the vendor. In step S2, the
MSISDN/mobile telephone number is used to determine the
SID assigned to the purchaser and in step S3 said the SID
is transmitted along with the other transaction data
25   (vendor ID, designation and invoice total of EUR 1) via a
data network 34 to the server 35 of the PSP. After
positive verification of the transaction data or SID, the
credit amount and customer profile in steps S4 to S6, in
step S7 the invoice total is posted. Based on an

instruction lodged in the customer profile, in step S8
confirmation of the posting of the invoice total of EUR 1
is sent from the server 35 of the PSP to the mobile
telephone 31 of the purchaser. In step S9, the posting

5   confirmation is sent to the server 33 of the vendor and
then in step S10 the vendor transmits the chargeable SMS
to the customer.

Fig. 7 shows a further example based on SMS, whereby steps

10   S1 (request for a chargeable service) to S6 (verification
of customer profile) operate in the same way as Fig. 5. In
the present case, a posting authorization is lodged in the
customer profile so that in step S7 the transaction data
is sent from the server 45 of the PSP to the mobile

15   telephone 41 of the purchaser. In step S8, the posting is
authorized by transmission of the invoice total, SID and
PIN to the server 45 of the PSP and said the posting is
then carried out in step S9. After transmission of the
posting confirmation to the server 43 of the vendor in

20   step S10, in step S11 the chargeable SMS is transmitted
from the vendor to the customer.

The embodiment of the invention is not restricted to the
descriptions given as examples above but includes a

25   plurality of modifications which are within the scope of
action by persons skilled in the art.

~~Claims~~What is claimed is: